

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT
(Under 37 CFR 1.97(d))

Docket No.
R.304045

In Re Application Of: **Bertram SUGG**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
10/540,026	January 25, 2006	Bryan P. Gordon	02219	2834	8866

Title: **PIEZOELECTRIC ACTUATOR AND A METHOD FOR ITS MANUFACTURE**

Address to:
Commissioner for Patents

The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(c), and on or before payment of the issue fee, and is accompanied by the Statement as specified in 37 CFR 1.97(e) and the fee set forth in 37 CFR 1.17(p).

- ☐ A check in the amount of _____ is attached.
- ☒ The Director is hereby authorized to charge and credit Deposit Account No. 07-2100 as described below.
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Dated: **March 11, 2008**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/540,026 Confirmation No. 8866
Applicant(s) : Bertram SUGG
Filed : January 25, 2006
TC/A.U. : 2834
Examiner : Bryan P. Gordon
Docket No. : R.304045
Customer No. : 02119

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Date: March 11, 2008

**INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97(d),
AND EXPLANATION OF THE RELEVANCE OF THE CITED PRIOR ART**

Sir:

The undersigned hereby requests that the prior art cited on the attached prior art statement be placed of record in the application file.

This citation of prior art is made under 37 CFR 1.97(d), since it is being filed after the mailing date of a Final Action, and is being accompanied by the fee of \$180 as set forth in 37 CFR 1.17(p).

The undersigned asserts that each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement.

The relevance of the prior art cited on the attached form PTO/SB/08a is as follows:

DE 198 60 001 A1

The invention shows a piezoelectric component, comprising electrically insulating material-containing interspaces (20) between piezoceramic layers (12), is new. A piezoelectric component comprises a stack (11) of at least two ceramic layers (12) with an interposed electrode layer (131, 132), an interspace (20) containing an electrically insulating material (21) being provided between the ceramic layers (12). An Independent claim is also included for production of the above piezoelectric component. Preferred Features: The insulating material (21) is a gas or a plastic and the ceramic layers (12) consist of lead zirconate-titanate.

DE 199 31 927 A1

No abstract available for this patent. It is cited to show state of the art.

DE 600 12 805 T2

The invention shows a porcelain insulator main body and a coating layer formed on a surface of the porcelain insulator main body, the coating layer being made of porcelain raw materials including mainly materials of high dielectric constant and having a relative dielectric constant larger than 4, wherein a ration between maximum value and minimum value of relative dielectric constants at micro portions in the coating layer along a thickness direction of the coating layer is smaller than 2. The porcelain insulator mentioned above can be manufactured by the steps of: (1) preparing said porcelain insulator main body; (2) preparing coating materials as a slurry by (a) grinding raw materials and mixing a clay therein to prepare porcelain raw materials made of 50-60 wt% of SiO₂, 20-30 wt% of Al₂O₃ and a remainder of MgO, CaO, K₂O, Na₂O, (b) preparing materials of high dielectric constant having a relative dielectric constant larger than 10 separately; and (c) mixing 100 parts by weight of the thus prepared porcelain raw materials and 3-10 parts by weight of the thus prepared materials of high dielectric constant; (3) applying the thus prepared coating materials on a surface of the porcelain main body; and (4) firing the porcelain main body in which the coating materials are applied on its surface.

JP 8-45346

The purpose of this invention is to provide dielectric porcelain which is sintered at a temperature as low as 1000 deg.C or less and has a high dielectric constant and sufficient mechanical strength by specifying the secondary-phase content and the etching thickness of lead-series complex perovskite dielectric porcelain. This lead-series complex perovskite dielectric porcelain has an etching thickness of 0.1 to 0.15 μ m when etched with an etchant with a pH of 2.0 or less, and has a secondary-phase content of 1.0% or less as represented by $\text{secondary--phase content(\%)} = (\text{the sum of the main peak strength of each secondary phase}) / (\text{the sum of the main peak strength of each secondary please} + \text{the main peak strength of the main phase})$ according to X-ray diffraction analysis data. The etchant with a pH of 2 or less made from hydrofluoric acid or nitric acid is used, and the etching thickness can be attained by 5 to 10 seconds of etching.

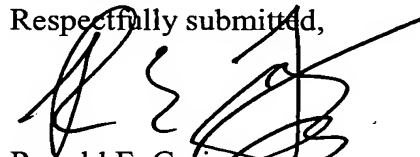
JP 2001-135871

The purpose of this invention is to provide a manufacturing method for a reliable laminated piezoelectric body, with a cost suppressed while corresponding to application, by forming an even ceramics coating layer at a part where the end surface of an internal electrode layer of the laminated piezoelectric body is exposed. A laminated piezoelectric body 1 has a structure where a piezoelectric ceramics layer 2 and internal electrode layer 3 are alternately laminated by plural numbers, with the end surface of internal electrode layer 3 exposed on the side surface, etc. Here, after a green sheet comprising piezoelectric ceramics and the internal electrode layer 3 are alternately laminated by plural numbers to form a green sheet laminated body of a specified shape, its outside surface is coated with ceramics, and de-binding and sintering are performed so that a ceramics coating layer 4 is formed at a part where the end surface of internal electrode layer 3 is exposed. The ceramics coating layer 4 is formed by a method suitable for required characteristics.

The Commissioner is hereby authorized to charge payment of the fee of \$180, or any/all fees associated with this communication to Deposit Account 07-2100.

Further examination of this application is respectfully requested.

Respectfully submitted,



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Enclosures
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